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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/733,407	12/08/2000	James B. Armstrong	DIVA/115	1885

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EXAMINER

MIRZA, ADNAN M

ART UNIT	PAPER NUMBER
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2141

DATE MAILED: 08/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/733,407

Applicant(s)

ARMSTRONG ET AL.

Examiner

Adnan M Mirza

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 February 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/3/9/01, 5/4/16/01.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-27 rejected under 35 U.S.C. 103(a) as being unpatentable over Craig (U.S. 5,790,176) and Bolosky et al (5,699,503).

As per claims 1,13,15,21 Craig disclosed Apparatus, comprising: a primary storage module, for storing an initial portion of each of a plurality of titles; a secondary storage module, for storing at least a remaining portion of at least one of said plurality of titles; and a controller (col. 10, lines 28-41 & col. 8, lines 51-54),

However Craig did not disclose in detail for processing user requests and causing said primary storage module to begin providing an output stream including an initial portion of a requested title; said secondary storage module provisioning said primary storage module with a remaining portion of said requested title such that said output stream includes said initial portion and said remaining portion of said requested title.

In the same field of endeavor Bolosky disclosed the preferred embodiment reduces the overall time slot by dividing the storage devices into a primary portion and a secondary portion. The primary portion of the storage device contains the sub-blocks of data. The preferred embodiment

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designates the primary portion as the faster region (typically the outer region) of the storage device and the secondary portion as the slower region (typically the inner region of the storage device). Thus the preferred embodiment takes advantage of the increased data transfer rates on the faster regions of a storage device. That is by using the using storage device segmentation, the majority of the data transferred during a time slot is retrieved from the outer region of the storage device that has a faster data transfer rate than the inner region of the storage device (col. 4, lines 41-55).

It would have been obvious to one having ordinary skill in the art at the time of the invention was made to have incorporated the preferred embodiment reduces the overall time slot by dividing the storage devices into a primary portion and a secondary portion. The primary portion of the storage device contains the sub-blocks of data. The preferred embodiment designates the primary portion as the faster region (typically the outer region) of the storage device and the secondary portion as the slower region (typically the inner region of the storage device). Thus the preferred embodiment takes advantage of the increased data transfer rates on the faster regions of a storage device. That is by using the using storage device segmentation, the majority of the data transferred during a time slot is retrieved from the outer region of the storage device that has a faster data transfer rate than the inner region of the storage device as taught by Bolosky in the method of Craig to improve the streaming of the digital data to subscribers in a more timely manner with concurring an delays.

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3. As per claims 2,17 Craig-Bolosky disclosed wherein said primary storage module comprises a disk drive array and said secondary storage module comprises at least one of a magneto-optical drive and a magnetic tape drive (Craig, col.11, lines 7-22).

4. As per claim 3 Craig-Bolosky disclosed wherein said primary storage module comprises a plurality of server modules, each of said server modules having associated with it a respective disk drive array, each of said server modules being capable of servicing a plurality of users (Bolosky, col. 3 lines 43-47).

5. As per claim 4 Craig-Bolosky disclosed further comprising: a switch, for multiplexing the respective output streams of said server modules to form therefrom a multiplexed output stream (Craig, col. 7, lines 46-56).

6. As per claims 5,20 Craig-Bolosky disclosed wherein each of said server modules has associated with it a respective output buffer capable of storing at least one service period of said respective server module output stream. (Bolosky, col. 4, lines 1-13).

7. As per claim 6 Craig-Bolosky disclosed further comprising: a transport processor, for receiving an output stream from said primary storage module and causing said output stream to be transported to at least one requesting user via a distribution network (Bolosky, col. 2, lines 26-41).

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8. As per claims 7,16,24 Craig-Bolosky disclosed further comprising: a plurality of server modules, each of said server modules being associated a respective disk array, wherein: a server module for storing at least an initial portion of a title operates as a primary storage module with respect to that title, and a server module storing a remaining portion of said title operates as a secondary storage module with respect to that title (Bolosky, col. 4, lines 41-67).

9. As per claims 8,23,26 Craig-Bolosky disclosed wherein a first server module operating as a primary storage module with respect to a requested title is provisioned by a second server module operating as a secondary storage module for said requested title (Bolosky, col. 4, lines 41-67).

10. As per claims 9,18 Craig-Bolosky disclosed further comprising: a switch, coupled to each of said server modules via a buffer, for multiplexing the output streams of each of said server modules to produce there from a multiplexed output stream for subsequent transport (Craig, col. 17, lines 7-24).

11. As per claims 10,14 Craig-Bolosky disclosed further comprising a transport processor, for adapting the multiplexed output stream primary storage switch for transporting requested titles to requesting users via a forward application transport channel (FATC) (Craig, col. 16, lines 28-50).

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12. As per claims 11,19 Craig-Bolosky disclosed wherein each of said respective server module buffers comprises a respective portion of a common memory module, said switch further comprising a direct memory access (DMA) output table for identifying the appropriate portions of the common memory module including data to be retrieved. and provided to said switch output (Bolosky, col. 4, lines 41-67).

13. As per claim 12 Craig-Bolosky disclosed wherein: each of said server modules is capable of servicing a plurality of users, and an over utilized server module is capable of migrating serviced users to an underutilized server module (Bolosky, col. 9, lines 34-51).

14. As per claim 22 Craig-Bolosky disclosed wherein said content stream including said remaining portion of said requested title is stored on a secondary storage device (Bolosky, col. 9, lines 23-30).

15. As per claim 25 Craig-Bolosky disclosed wherein each of said server modules is capable of servicing a plurality of users, said method further comprising: determining a utilization level for each server module; and migrating at least one user from an over utilized server module to a non-over utilized server module (Craig, col. 5, lines 43-53).

16. As per claim 27 Craig-Bolosky disclosed migrating a user receiving said content stream from said primary storage device to said secondary storage device when a user load balancing among storage devices is appropriate (Bolosky, col. 13, lines 23-53).

Conclusion

17. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Adnan Mirza whose telephone number is (703)-305-4633.

18. The examiner can normally be reached on Monday to Friday during normal business hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dharia Rupal can be reached on (703)-305-4003. The fax for this group is (703)-746-7239.

19. The fax phone numbers for the organization where this application or proceeding is assigned are as follows:

(703)-746-7239 (For Status Inquiries, Informal or Draft Communications, please label "PROPOSED" or "DRAFT");

(703)-746-7239 (For Official Communications Intended for entry, please mark "EXPEDITED PROCEDURE"),

(703)-746-7238 (For After Final Communications).

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20. Any Inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-305-3900.

Any response to a final action should be mailed to:

BOX AF

Commissioner of Patents and Trademarks Washington, D.C.20231

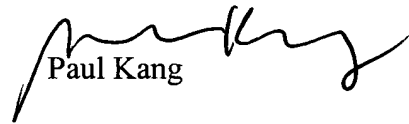
Or faxed to:

Hand-delivered responses should be brought to 4th Floor Receptionist, Crystal Park II,
2021 Crystal Drive, Arlington, VA 22202.



Adnan Mirza

Examiner



Paul Kang

Primary Examiner